

Topic 7i: Scatter Plots in R

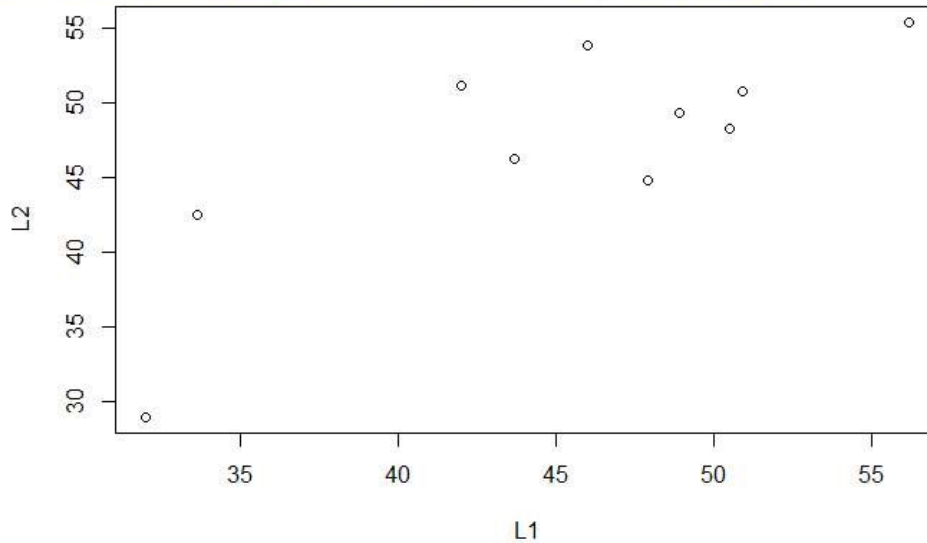
We will start with the same data values that we had in Topic 7h, but this time we see that we can generate the values using `gnrnd4()`.

`gnrnd4(1273370910, 450008500425)`

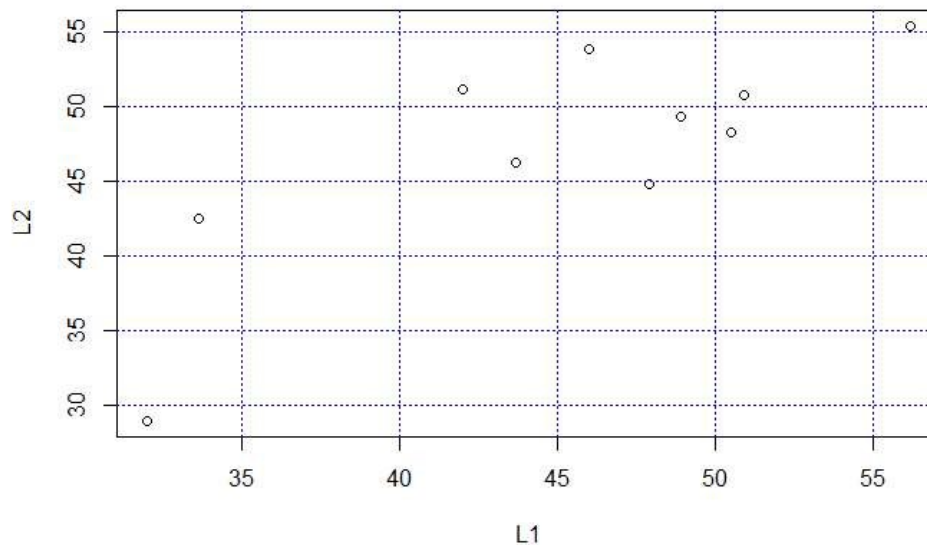
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|-----------|------|------|------|------|------|------|------|------|------|------|
| X: | 43.7 | 32.0 | 56.2 | 33.6 | 47.9 | 50.9 | 50.5 | 46.0 | 42.0 | 48.9 |
| Y: | 46.3 | 29.0 | 55.4 | 42.5 | 44.8 | 50.8 | 48.3 | 53.9 | 51.2 | 49.4 |

The values are generated in L1 and L2 with L1 holding the x values and L2 holding the y values.

Then we just need to use the function `plot(L1, L2)` to get our scatter plot.



Of course we can spruce that up a bit by adding horizontal and vertical lines using the `abline()` function to get:



Let us look at a little bit of real data. Here is a table that gives the levels of carbon monoxide and nitrogen dioxide at one EPA measuring station for a few select dates.

| Date | NO2 ppb | CO ppm |
|-----------|---------|--------|
| 1/8/2019 | 6.26 | 0.350 |
| 1/16/2019 | 17.08 | 0.636 |
| 1/17/2019 | 14.85 | 0.554 |
| 1/23/2019 | 8.44 | 0.343 |
| 1/27/2019 | 19.37 | 0.842 |
| 1/29/2019 | 5.78 | 0.219 |
| 2/8/2019 | 3.10 | 0.138 |
| 2/22/2019 | 8.73 | 0.375 |

If we want to look at the relationship between the two values then we want to create a scatter plot for them. The R statements are given in the associated script. The resulting scatter plot is shown below.

